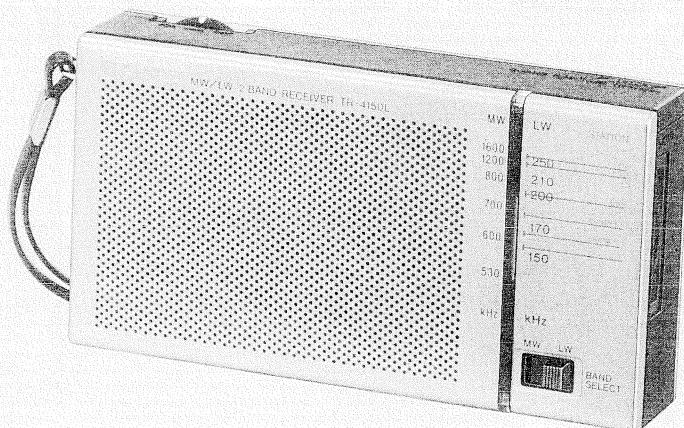


TR-4150L

*AEP Model
UK Model*



MW/LW 2-BAND RADIO

SPECIFICATIONS

Power Requirement: 3 V dc, two batteries
IEC designation R6 (size AA)

Frequency Range: MW: 530—1,605 kHz (566—187 m)
LW: 150—255 kHz (2,000—1,176 m)

Antenna: Built-in ferrite-rod antenna

Speaker: Approx. 5.7 cm (2 1/4 inches) dia.

Power Output: 90 mW (at 10 % harmonic distortion)

Output: Earphone jack (minijack)

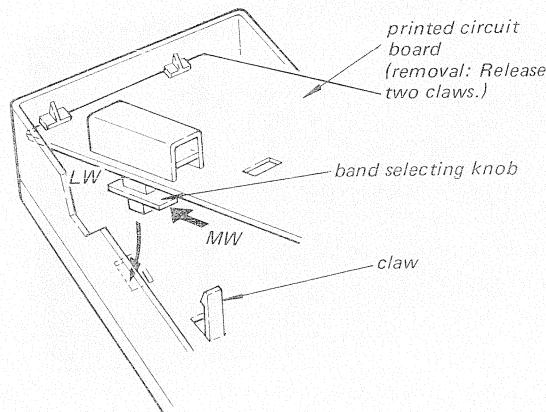
Dimensions: Approx. 147 (w) x 76 (h) x 35 (d) mm
5 3/4 (w) x 3 (h) x 1 3/8 (d) inches
including projecting parts and controls

Weight: Approx. 280 g (10 oz)
including batteries

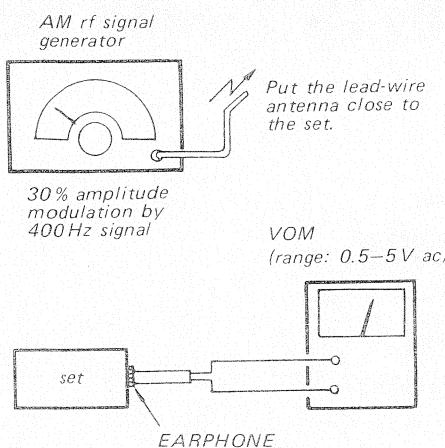
SONY®
SERVICE MANUAL

**CAUTION OF PRINTED CIRCUIT BOARD
INSTALLATION**

When installing the printed circuit board, set the band selecting switch to the LW position.
(If the band selecting switch is in MW position, the knob may be spoiled.)

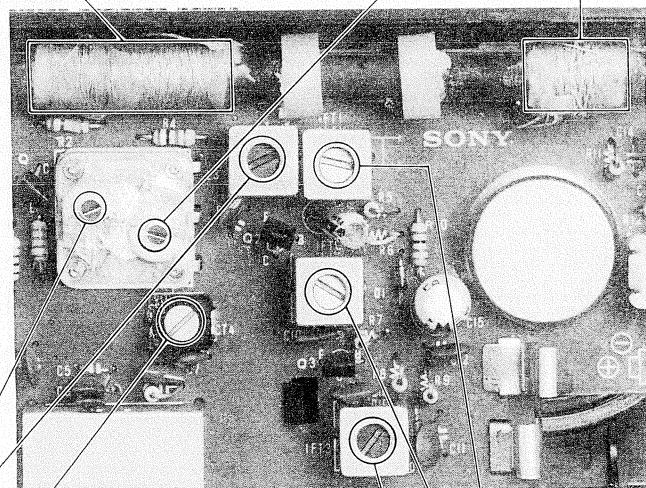


1. ELECTRICAL ADJUSTMENT



LW TRACKING ADJUSTMENT	
Adjust for maximum reading on VOM.	
L2	200 kHz

MW TRACKING ADJUSTMENT	
Adjust for maximum reading on VOM.	
1,400 kHz	620 kHz



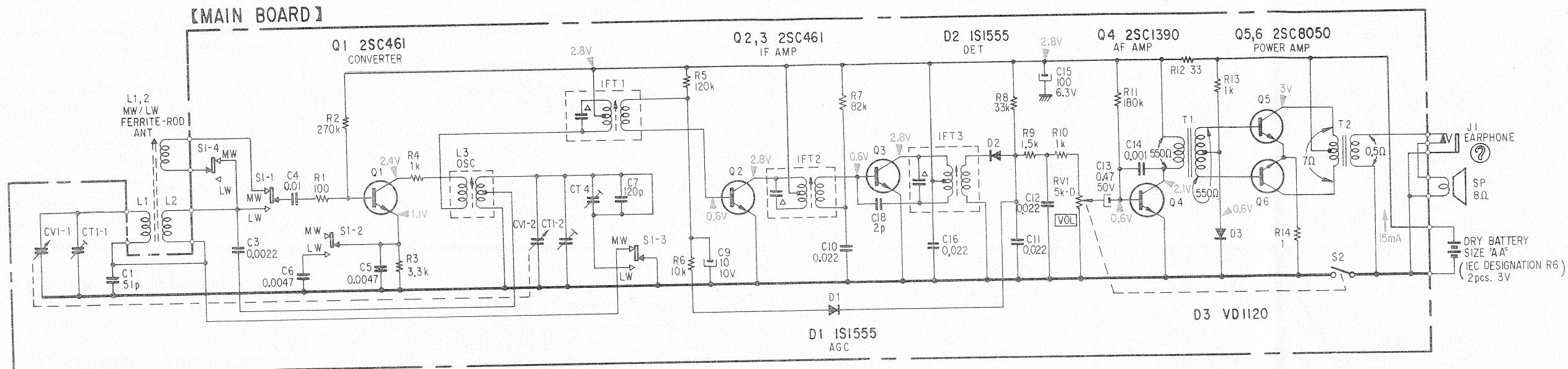
- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for maximum reading on VOM.	
1,680 kHz	CT1-2
520 kHz	L3

CT4	260 kHz
Adjust for a maximum reading on VOM.	
LW FREQUENCY COVERAGE ADJUSTMENT	

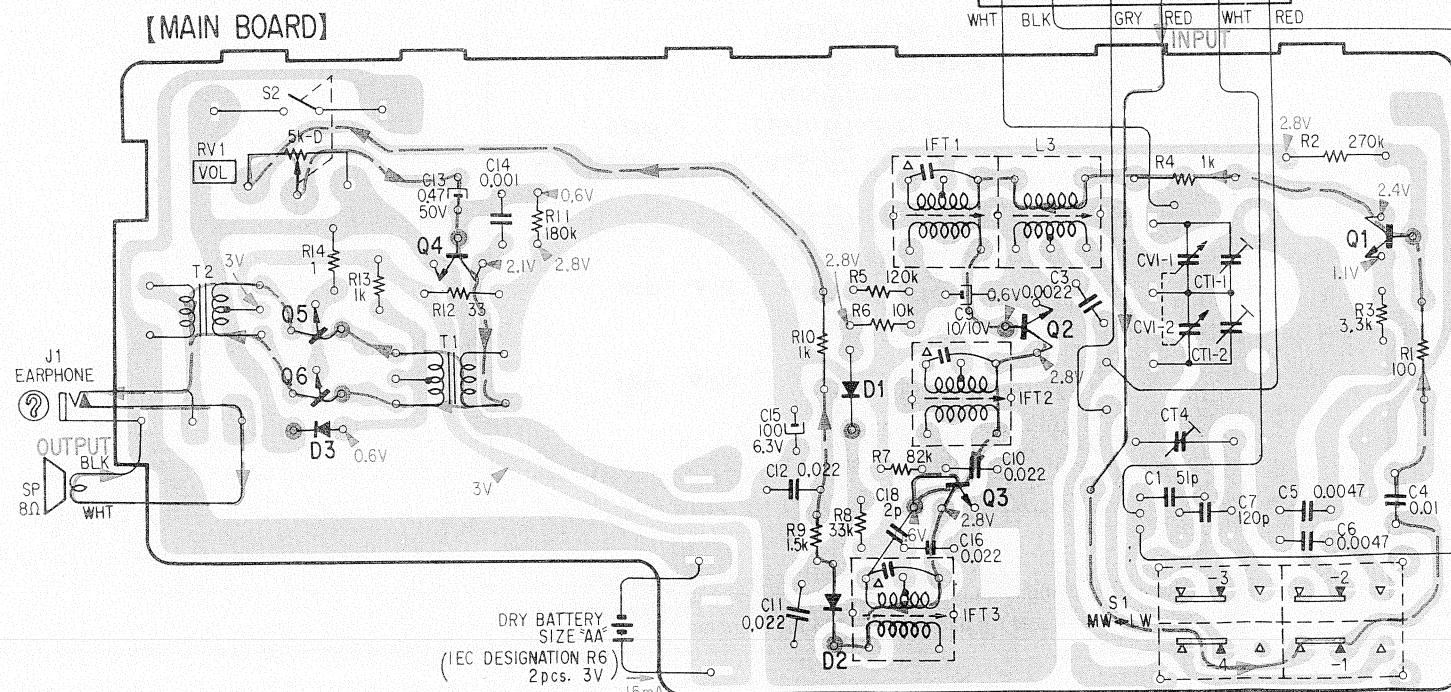
IFT1, 2, 3	468 kHz
Adjust for maximum reading on VOM.	
MW IF ALIGNMENT	

2-1. SCHEMATIC DIAGRAM



2-2. MOUNTING DIAGRAM

— Conductor Side —



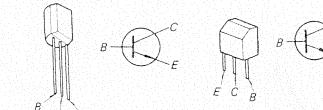
Q	5	4	2	1	Q
D	6				D

Q	3	2	1	D
---	---	---	---	---

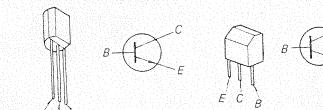
• Replacement Semiconductors

For replacement, use semiconductors except in ().

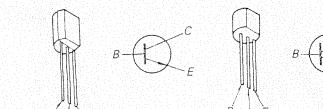
Q1-3: 2SC710 (2SC461)



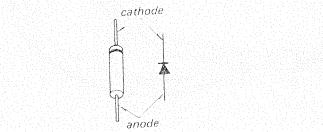
Q4: 2SC1364 (2SC1390)



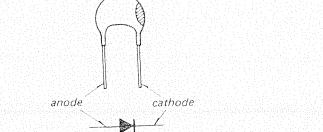
Q5,6: 2SC2001 (2SC8050)



D1,2: 1S1555



D3: VD1120



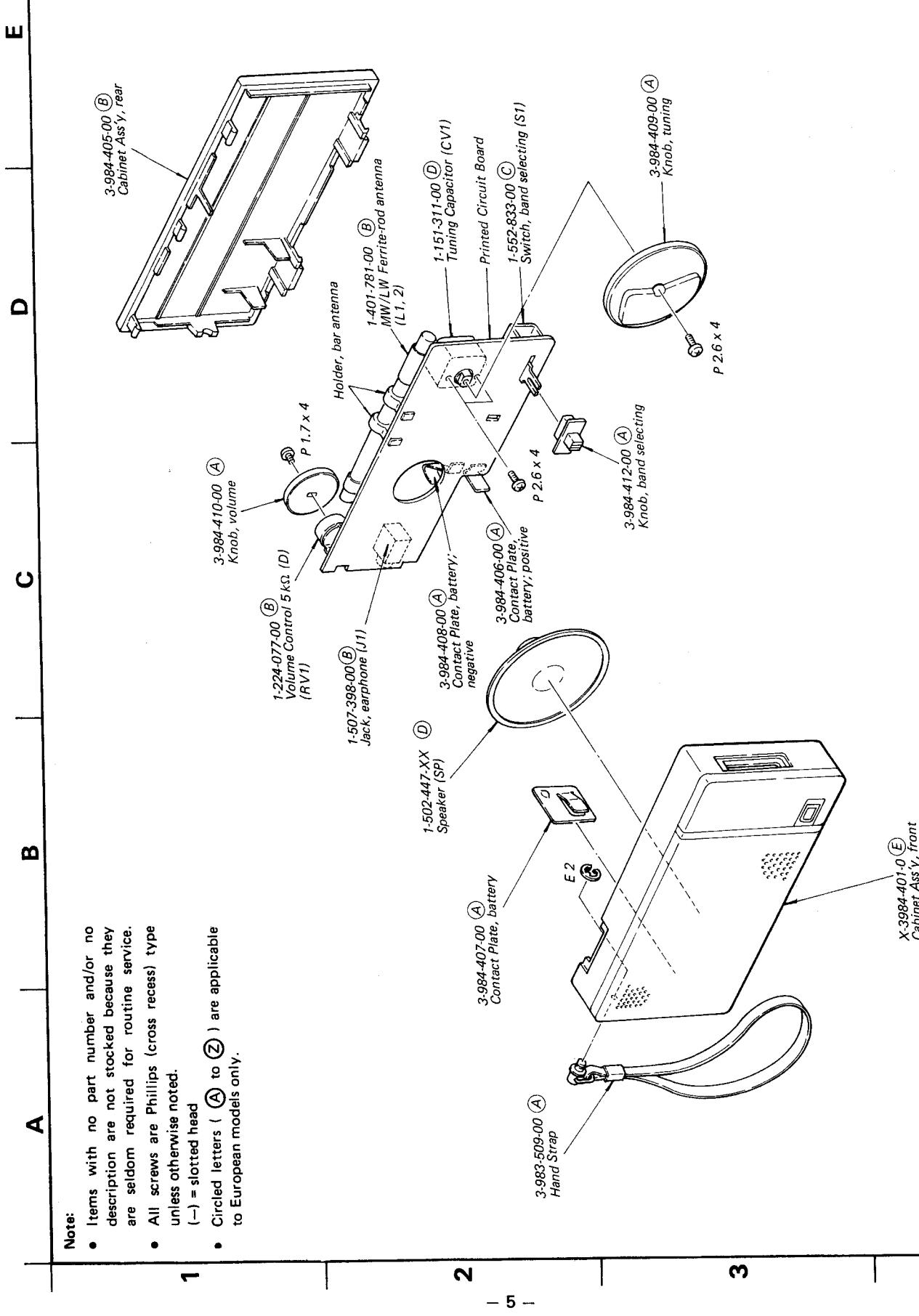
[Note for schematic diagram]

- All capacitors are in μF unless otherwise noted. $\text{pF} = \mu\mu\text{F}$ 50WV or less are not indicated except for electrolytics.
- Voltage variations may be noted due to normal production tolerances.
- \triangle : internal component.
- : B+ bus.
- : panel designation.
- All resistors are in ohms and $1/4\text{W}$. $\text{k}\Omega$: 1000 Ω ; $\text{M}\Omega$: 1000 $\text{k}\Omega$.
- Transistor base-emitter voltages are measured on the 2.5 V range.
- Readings are taken under detuned conditions in MW position with a VOM (20 $\text{k}\Omega/\text{V}$).

[Note for mounting diagram]

- : indicates side identified with part number.
- DC resistance measurements are with coils connected on the circuit board, and are approximate.
- : B+ pattern
- : signal path

3 EXPLODED VIEW



4. ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
----------	----------	-------------

SEMICONDUCTORS

Transistors		
⇒ Q1-3	8-729-671-13 (B)	2SC710
⇒ Q4	8-729-663-47 (B)	2SC1364
⇒ Q5, 6	8-729-100-13 (B)	2SC2001

Diodes		
D1, 2	8-719-815-55 (A)	1S1555
D3	8-719-112-01 (A)	VD1120

COILS & TRANSFORMERS

IFT1, 2	1-404-060-00 (B)	IFT
IFT3	1-404-061-00 (B)	IFT
L1, 2	1-401-781-00 (B)	Ant, ferrite-rod; MW/LW
L3	1-405-736-00 (B)	OSC coil
T1	1-423-194-00 (C)	Transformer, input
T2	1-427-357-XX (C)	Transformer, output

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted. 50 WV or less are not indicated except for electrolytics.
p: $\mu\mu\text{F}$, elect: electrolytic

C1	1-101-882-00 (A)	51 p	
C3	1-108-563-00 (A)	0.0022	mylar
C4	1-101-923-00 (A)	0.01	
C5, 6	1-108-571-00 (A)	0.0047	mylar
C7	1-107-087-00 (A)	120 p	silvered mica
C9	1-121-651-00 (A)	10	16 V elect
C10-12	1-101-924-00 (A)	0.022	
C13	1-121-726-00 (A)	0.47	50 V elect
C14	1-101-455-00 (A)	0.001	
C15	1-121-413-00 (A)	100	6.3 V elect
C16	1-101-924-00 (A)	0.022	
CT4	1-141-138-XX (C)	Trimmer	
CV1	1-151-311-00 (D)	Tuning	

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: Circled letters (A) to (Z) are applicable to European models only.

Ref. No.	Part No.	Description
RESISTORS		
RV1	1-224-077-00 (B)	Variable, 5 k Ω -D; VOL (including S2)
MISCELLANEOUS		
J1	1-507-398-00 (B)	Jack, earphone
S1	1-552-833-00 (C)	Switch, band selecting
S2		Switch, power (included in RV1)
SP	1-502-447-XX (D)	Speaker
ACCESSORIES & PACKING MATERIALS		
Part No.	Description	
3-701-621-00 (A)	Bag, plastic	
3-984-415-00 (A)	Carton (including instruction manual)	
3-984-416-11 (A)	Manual, instruction; German & French (AEP model)	